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ABSTRACT

Unit cost is an anticipated offspring of the pressing notions of accountability, efficiency, and comparability, coupled with the decreasing availability of both public and private resources for higher education, and the increasing cost of deliverance of higher education in general. The two most widely used measures of unit cost in higher education are, among others, the unit cost by discipline and by program. In order to calculate meaningful costs of any sort, the following resources are necessary: (1) conceptual framework; (2) methodology; (3) data base; and (4) manpower and other related resources (e.g., computer time). Depending on the unique budgeting format of each institution, different procedures would have to be developed to get the accounts crossed over and complete the cost of study. Owing to the diversity of budgeting and accounting practices in different institutions, it appears that no single ideal budgeting format can be suggested. The implications and ramifications of a cost study are often beyond the original intended use of the results. Care must be devoted to the development of a clear conceptual framework and some well-defined procedures before embarking on the work of crossing over the accounts. (Author/KE)

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BUDGETING FORMAT & PROGRAM ANALYSIS:
ACCOUNT CROSSOVER & COST STUDY

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BUDGETING FORMAT & PROGRAM ANALYSIS: ACCOUNT CROSSOVER & COST STUDY*

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Introduction

During the past few years, much effort and attention have been devoted to the estimation of the real cost of higher education. Cost studies, along with budgeting, have become areas of major concern at the institutional, state and national level. Costs, in particular unit costs, of all types are arousing more and more interest from administrators and policy decision makers in all echelons.

The idea of unit cost comes as an indispensable ingredient, if not a logical outgrowth and consequence, of the planning-programming-budgeting system (PPBS), which has been implemented by most institutions in one form or other, although not necessarily using the same title or acronym. Actually, unit cost is also an anticipated offspring of the pressing notions of accountability, efficiency and comparability, coupled with the decreasing availability of both public and private resources for higher education and the increasing cost of deliverance of higher education in general.

The two most widely used measures of unit cost in higher education are, among others, the unit costs by discipline and by program. These two pieces of information are nurtured by NCHEMS as the main thrusts in their Cost Finding Principles (CFP) and Information Exchange Procedures (IEP) projects.

In order to calculate meaningful costs of any sort, the following resources are necessary:

1. A conceptual framework for unit cost analysis and for the determination of both direct and indirect costs,
2. A methodology (in other words, procedures) of how to go about doing the necessary calculation and estimation,
3. An adequate data base containing all information required by the methodology, and
4. Sufficient manpower and other related resources (e.g. computer time) to carry out the study.

Without all of the above, it is doubtful if any cost study at all can be carried out successfully and accurately.

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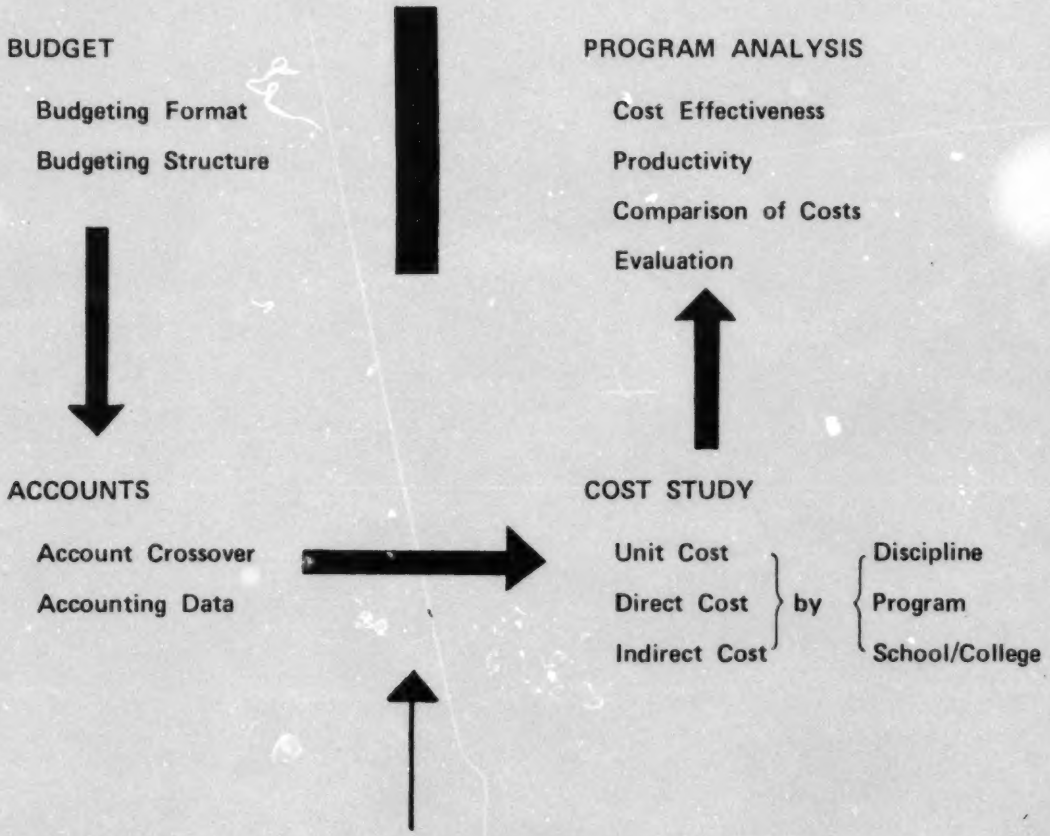
FIGURE 1


BUDGET
Budgeting Format
Budgeting Structure
PROGRAM ANALYSIS
Cost Effectiveness
Productivity
Comparison of Costs
Evaluation
ACCOUNTS
Account Crossover
Accounting Data
COST STUDY
Unit Cost
Direct Cost
Indirect Cost
by
Discipline
Program
School/College
OTHER DATA
Enrollment
Credit Hours
Faculty
Personnel
Facilities
Space

A major portion of the data base mentioned above contains needed financial data, which are the end products of the budgeting and accounting system, be it automated or not. The budgeting format of an institution, to a great extent, shapes and determines not only its fiduciary accounting structure and decision making pattern, but also its simplicity or complexity of performing a meaningful unit cost study.

Figure 1 describes the relationship of the four terms: budgeting format, account crossover, cost study and program analysis. Most budgeting formats in institutions do not allow going directly to program analysis. It therefore becomes necessary to crossover the accounts from a structure for fiduciary and operational purposes to one for cost analysis and the evaluation of programs. Most program analysis and cost studies require financial data to be broken down according to discipline, program or school, whereas the fiduciary budgeting and accounting structure does not usually provide such fine details. This difference in emphasis thus necessitates an account crossover.

Who or which office is in the best position to carry out or get involved with the cost study?

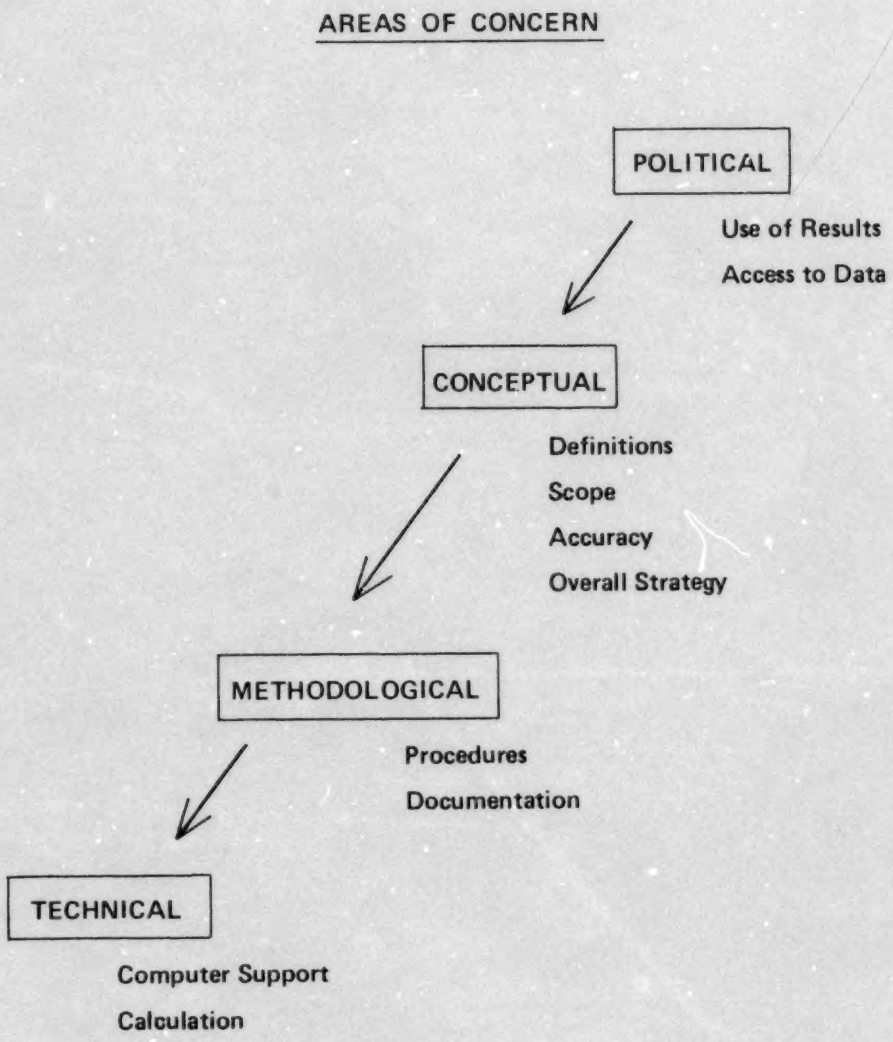
Top administrators and policy makers (e.g. Presidents, Provosts, Regents) in the highest echelon needs the results from cost studies to help them make decisions. The cost study would have been of little or no use if the end products are not in the format that the "end users" want. Therefore, involvement of top administrators will be most helpful to insure the future utility of the study.

The Business Office (usually under the VP in Finance) knows the budgeting and accounting data very well, knows the financial structure in and out, knows where general and special items are budgeted, knows where the double counts are, knows how to balance the budget within categories, and knows other details which people not in that office seldom know of.

The Office of Institutional Research, on the other hand, usually has the expertise and techniques to carry out and coordinate such a complex, analytical undertaking.

The complexity of the cost study for any institution of a fair size requires the technical involvement of computer analysts. Handling the NCHEMS software package, making modifications to suit the specific institution, and developing in-house computer programs to accomplish the crossover and the cost study are no simple tasks.

FIGURE 2


AREAS OF CONCERN
POLITICAL
Use of Results
Access to Data
CONCEPTUAL
Definitions
Scope
Accuracy
Overall Strategy
METHODOLOGICAL
Procedures
Documentation
TECHNICAL
Computer Support
Calculation

Therefore, it seems that the best strategy is to have a combined effort of the above offices with Institutional Research to be in charge. Such combination will probably insure smooth completion of the project.

Areas of Concern

Several areas of concern in carrying out a cost study are depicted in Figure 2.

The possible improper use of cost study results by decision makers stands out as one of the most crucial issues. Misunderstanding and inaccurate interpretation of results often lead to the making of inappropriate decisions and policies. It would have defeated the original intended purposes of a cost study if the comparison of costs, productivity and cost-effectiveness of programs and schools are being made without a thorough understanding and awareness of the cost study procedures and its shortcomings.

The accuracy of cost study results is another major area of concern. It is not surprising to find that cost study results are very unstable, in the sense that a small difference in the methodology will generate quite different results. Depending on the budgeting and accounting practices of the institutions, crossing over the same chart of accounts of two institutions in the same system may generate inconsistent figures. Even though NCHEMS specifies certain procedures to some extent, there is no way to ascertain uniform manipulation of the accounts to arrive at the end results.

What is the use of such unit costs if they are not accurate and stable in the first place?One naturally places less confidence in comparing discipline and program unit costs between institutions than within one insitition. The validity and usefulness of such uniform comparison of unit costs across state or across nation is doubtful. However, cost study results are of indisputable importance for internal use for year to year comparison and as a tool for evaluation.

A necessary component of a successful cost study is a conceptual framework comprised of precise definitions and a well laid out strategy. Another essential part is the effort in documenting in detail the steps and procedures, as well as the assumptions and adjustments made during the many phases of the cost study.

The starting point for a crossover is the chart of accounts which describes the budgeting format of an institution. An abridged chart of accounts for expenditures FY 74-75 for the University of Georgia is given in Figure 3 as an example. Every 17-digit account number is separated into seven fields. However, no single field may be used alone

FIGURE 3

UNIVERSITY OF GEORGIA

ABRIDGED CHART OF ACCOUNTS FOR EXPENDITURES FY 74-75

FUND GROUP XX	FUNCTION XX	OPERATION X	ACTIVITY X	DEPT. XXX	PROJECT XXX	OBJECT XXXXX
10 Resident Instruction	For Fund Groups 10-38:	D Departmental Services	A Administration	A three digit number identifying each budgetary unit.	A three digit number identifying a project within a budgetary unit.	50000 Contingency Balance–Personal Services
21 Agricultural Experiment Stations	11, 12 Instruction	G General	B General Experiment Station			51xxx Personal Services
22 Cooperative Extension Services	21, 22 Organized Activities	R Restricted	C College Experiment Station			59xxx Joint Staff–Other Institution
38 Marine Resources Extension Services	31, 32 Research		D Georgia Experiment Station			60000 Contingency Balance–Non Personal Services
51 Auxiliary Business	41, 42 Extension & Public Service		E Extension & Public Services			60001 Travel
52 Auxiliary Student Affairs	51, 52 Libraries		F Georgia Coastal Plain Experiment Station			60002 Operating Expense
53 Auxiliary Continuing Education	61, 62 Student Services		H Instruction–Instruction			60003 Equipment & Books
54 Auxiliary Rural Development	71, 72 Physical Plant		J Instruction –Admin.			60004 Student Aid
60 Student Aid	81, 82 General Administration		K Instruction–Counseling			60200 Purchase for Resale
80 Unexpended Plant Funds	91, 92 General Institutional		L Libraries			62310 Work Study Program Assistance
90 Agency Funds	94 Staff Benefits		M Activities Related to Educational Depts.			64100 Debit Retirement
	For Fund Groups 51-54:		N Not Applicable			7xxxx Miscellaneous Objects
	10 Student Housing		P Physical Plant			
	30 Food Services		R Research			
	40 Stores & Shops		S Student Services			
	50 Service Units		T General Institutional			
			V Instruction–In Service			
			W Auxiliary Reserves & Surplus			
			Y Internal Income			
			Z State Appropriation			

to cross over the accounts, since the activity categories are different from the major cost objectives in a cost study as recommended by NCHEMS' program classification structure (PCS).

In order to facilitate the completion and to increase the accuracy of a cost study, it might be desirable to have one or two fields in the account number coincide with the units of analysis. Hence, the internal cost accounting will be more in line with the final result of a cost study. Such modification or addition to the chart of accounts will inevitably add to the burden of bookkeeping and accounting.

Some expenditure items are budgeted in central accounts while others are decentralized. Depending on individual budgeting and accounting practices, special adjustments have to be made accordingly. Figure 4 outlines the steps of an account crossover at the University of Georgia.

Step 3 in the figure should not be overlooked. At this step, the accounts are listed and numerated in different ways according to the fields of the account number. This may be used as a check point later on to ensure the crossing over of all accounts in a particular group.

Aside from incomplete and inaccurate reporting, if the results from faculty activity reports are being used to prorate the entire budget of academic departments, the cost of certain departments' activities, in most cases, may have been under- or over-estimated depending on whether they are labor intensive or capital intensive.

Several major issues still remain to be researched: How should the operating budget for fiduciary purpose be structured to facilitate the costing of programs and program analysis? Should unit cost analysis determine the format and structure of the budget?Or vice versa? How can unit costs be more consistently, accurately and uniformly assessed? Is there any single desirable budgeting and accounting format which will facilitate the crossover?

Summary

Some areas of concern regarding a cost study and account crossover have been very briefly discussed. More questions, problems and uncertainties than solutions and alternatives have been raised. Depending on the unique budgeting format of each institution, different procedures would have to be developed in order to get the accounts crossed over and complete the cost study. Owing to the diversity of budgeting and

FIGURE 4

PROCEDURES OF ACCOUNT CROSSOVER AT

THE UNIVERSITY OF GEORGIA

1. Get from the Business Office a computer tape of accounts (account numbers and budget amounts.)
2. Exclude inactive accounts and accounts on revenues, assets, liabilities, reserves, fund balances and surplus, resulting in non-zero expenditure accounts for analysis.
3. Examine accounts.
4. Determine scope of analysis and determine final cost centers (i.e. objectives for analysis).
5. Ascertain actual rate for staff benefit and adjust accounts.
6. Pool all expenditures on land, buildings, renovations, and capital equipment.
7. Lump all expenditures for physical plant.
8. Adjust purchases for resale and other charge back.
9. Handle expenditures for auxiliary business, computing center, student aid, work study.
10. Cross over groups of accounts by keying on certain codes of the account numbers.
11. Cross over academic department accounts through the use of faculty activity report.
12. Cross over other accounts.
13. Redistribute support costs and indirect costs to the major output cost centers (namely, instruction, research and public service).

accounting practices in different institutions, it appears that no single ideal budgeting format can be suggested. Given the present budgeting format in each institution, it might be appropriate for Institutional Researchers to be cautious in carrying out a cost study like the NCHEMS-IEP. The implication and ramification of a cost study are often beyond normal expectation, and often beyond the original intended use of the results. Care must be devoted to the development of a clear conceptual framework and some well-defined procedures before embarking on the nitty-gritty work of crossing over the accounts.

BUDGETING FORMAT & PROGRAM ANALYSIS:
ACCOUNT CROSSOVER & COST STUDY

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